

### **Abstract**

A digital-to-analog converter (DAC) comprises a current DAC, first and second resistance circuits, and an operational transconductance amplifier (OTA). The first resistance circuit is coupled between a first node and an output of the OTA. The  
5 second resistance circuit is coupled between the first node and a power supply node. The current DAC is arranged to provide an analog current to a first node in response to a digital input signal. The OTA has a first input that receives a stable DC reference voltage signal, and a second input that is coupled to the first node. A charge pump provides the local supply voltage of the OTA to improve the system dynamic range. The output  
10 voltage corresponds to the sum of the voltages across the first and second resistance circuits. An increase in the current produced by the current DAC causes a decrease in the output voltage.

